CONCORDIA UNIVERSITY

Graduate Studies News

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From the Dean's Desk

Program Appraisals – A case for quality

June is the month during which departments and graduate program directors at Concordia reflect on their report cards from the Board of Graduate Studies Appraisals Committees. Every five years, master's or doctoral programs at Concordia are subjected to internal and external audits that are designed to encourage and control the quality of graduate education at this University. Because of their design, graduate diploma programs are appraised every four years. How effective is the process?

An appraisal starts with a report prepared by the program that describes the curriculum, the academic credentials of the professors attached to the program, the courses taught, and the theses supervised during the last five years. The report also contains a new five-year plan and a detailed account of the professional success of the graduates of the program. In addition, the Board of Graduate Studies circulates questionnaires among past and present students and solicits their opinions on a variety of academic and personal concerns about the management of the program. The Board also carries out an analysis of the level of research of the professors involved in the program and examines library and space needs. An external consultant then visits Concordia and prepares an independent assessment of the quality of the program and on the improvements that are deemed necessary in relation to similar programs elsewhere and in the context of the evolution of the discipline.

Based on these documents and findings, the Board of Graduate Studies prepares reasoned reports containing suggestions for improvement (Recommendations) and listing required changes (Modifications). Appraised programs must then respond to these reports in the fall of the same year and present a timetable for the implementation of the required modifications.

Implicitly, the appraisals process has served as an effective **local planning** tool for graduate studies at Concordia for almost twenty years. The fact that a program is periodically accountable to the Board of Graduate Studies means that it must be able to explain its academic and professional aims and actions to academics in other fields and to leaders in the discipline in other universities. It has been found that in an environment of extensive academic freedom, this element of both general and peer review functions as a major restraining factor and as a catalyst for most programs. It also allows for substantial requests for additional resources from the University in the case of exceptionally successful programs. As such the appraisals process forces the University to determine some of its own **global priorities**. Several of our best departments and graduate programs have reached their positions of prominence within the University and within the academic community at large with the help of this process.

With the recent introduction of a more formal university-wide strategy for development by the University Senate, new avenues for systematic

planning have been created, and in the future the appraisals process can concentrate on quality control, curriculum, research, enrollment, and the design of new programs. The Board of Graduate Studies has therefore restructured the appraisals mechanism to respond effectively to this new context. From now on, graduate programs will be appraised every seven years and must, in addition, present progress reports three years after an appraisal. This new format is less costly and increases the rate of accountability for the successful implementation of requested modifications. A program is also able to flag more readily major changes in its professorial roster or student population. This information enhances the effective input of graduate studies into the planning and hiring activities of the University. Much of the tedium of the reporting aspects of appraisals is being standardized via the electronic medium. Statistical information and a variety of other public data will soon be available to graduate programs from the Office of the Dean of Graduate Studies. Appraisals reports will therefore be able to concentrate on matters of academic concern and will be able to document more reliably the resource implications of proposed actions. We are confident that this new process will continue to enhance the quality of our programs and will facilitate the rational development and growth of our graduate faculty.

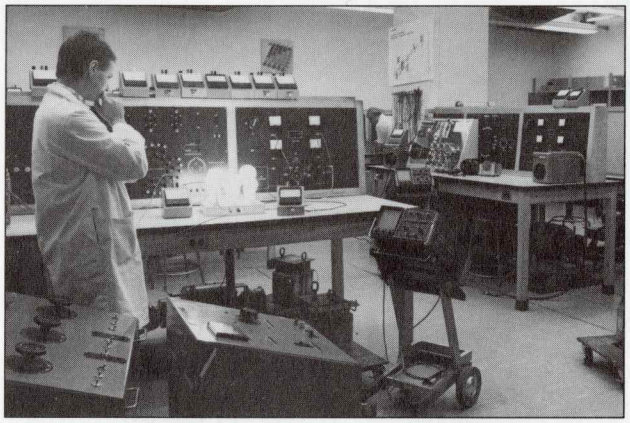
Electrical Engineering

There is strength in numbers, as the saying goes. And when Dr. K. Thulasiraman, Graduate Program Director, says that Concordia's graduate programs in Electrical Engineering ranks among the top five programs in the country, he has the numbers to back him up. A few facts and figures:

- Last year alone, for instance, with a total of 22 faculty members, the department produced 63 research papers that were published in refereed journals, as well as another 90 conference papers. Some of these papers have won international awards for excellence.
- The department has produced a total of 10 textbooks – nine at the graduate level and one at the undergraduate level – and approximately one out of every three faculty members has authored or co-authored such a text. Eight of these books have been published since 1979.
- The department is heavily involved in 11 areas of research and receives more than $1 million every year in research grants.
- The department has graduated more than 40 PhD students, 22 of whom completed their degrees in the last six years. This represents an average of 3½ PhD graduates a year (in the past six years) and Thulasiraman would like to see that number rise to five per year in the near future.

Not too bad when you consider that the graduate studies programs in Electrical Engineering – with two master's options and one PhD option – has been in existence only since 1970.

"We have a very high level of research activity, and our faculty has a very high international profile," Thulasiraman says, adding that three faculty members are fellows of the prestigious Institute of Electrical and Electronic Engineers (IEEE). As well, one former faculty member has gone on to become editor of **Circuits and Systems** magazine, which is to electrical engineering what **Foreign Affairs** is to diplomacy. As a result of this, the program is starting to attract high quality students, including top knotch applicants from Montréal and across Canada, and the cream of the crop from overseas.



Technician D. Juras in the Power Lab. of Electrical Engineering

There are two 45-credit options at the master's level – the thesis oriented A-option and the course oriented B-option. As the A-option involves original research work and is quite demanding, all master's students are admitted firstly to the B-option, and they can then apply to the A-option.

Thulasiraman tells students to go on to the PhD if at all possible, saying his advice to them is "to get as many degrees as you can." The 90-credit doctoral program involves a minimum of 18 credits in course work and a research thesis with a weighting of 72 credits.

Faculty members' research falls into 11 categories:

1. Systems, control and robotics
2. Circuits, systems and filters
3. Graph theory, combinatorial optimization and algorithms
4. Communications
5. Computer communications and protocols
6. Signal processing
7. Computer engineering and VLSI systems
8. Microelectronics, compound and semi-conductors and devices
9. Microwaves and optoelectronics
10. Antennas and electromagnetic compatibility
11. Power electronics and adjustable speed drives

Research projects include development of a local, optical fiber-based, computer communications network; research into unwanted interactions between electronic systems, as happens when a commercial AM radio station's signal is scattered from a power line and interferes with another station in another city; design of uninterruptable power supply systems, which means systems not easily affected by fluctuations; research into Very Large Scale Integration (of transistors into computer chips); and materials science research into gallium arsenide, a new material for use in VLSI.

While the base figure for fellowships and teaching assistantships is approximately $10,000, students can acquire more funds by applying for more than one grant. It is possible for PhD students to qualify for anywhere from $12,000 to $14,000 per year in grants. Bursaries are also available.

Funding is provided by the federal government through the Natural Sciences and Engineering Research Council of Canada (NSERC); by the provincial government through the Actions Structurantes and Actions Spontanées programs, which solicit funds from the Fonds Pour la Formation de Chercheurs et l'Aide à la Recherche (FCAR); and by industry through companies such as Memotech Data Inc., Northern Telecom, RCA, S.R. Telecom Inc. and Inverpower Control Ltd., to mention only a few. The Electrical Engineering department is well-equipped for its research activities with a number of up-to-date laboratories on both the Sir George and Loyola compuses of the university. These too may be shared by other departments in the university, and they include an electromagnetic compatibility lab, a VLSI lab, a power electronics lab and access for Electrical Engineering students and professors to the university's computer engineering lab.

Career prospects are good, Thulasiraman says. "Students have no problems at all finding jobs. Many of our PhD graduates now occupy very senior positions in universities and private industry."

Those interested can call Electrical Engineering at **(514) 848-3100** or write to the department at 1455 de Maisonneuve Blvd. West, H-915, Montréal, Québec, H3G 1M8.

Master of Arts (Applied Linguistics)

This summer from July through August, Concordia's Centre for Teaching English as a Second Language will play host to the TESL Canada Summer Institute, an annual series of courses and seminars based around a common theme.

The theme for 1987 – Language Education in Canada: Exploring Common Ground – is intended to provide an opportunity for practitioners from heritage languages, Native language education and English as a second language to investigate the common ground shared by their respective disciplines.

The institutes began in 1985 at the University of British Columbia and are meant to draw together the resources and expertise in "policy-making, syllabus design, methodology, materials development, and teacher training and certification." A published guide to this year's institute states, "As well as enriching us as professionals, sharing expertise and experience makes economic sense in times of limited financial resources."

Courses are offered during two three-week terms (July 2 to July 22 and July 27 to August 14) and seminars will be held throughout that period as well as during the three-day TESL Canada Summer Forum (July 23 to July 26). This is a conference which also includes plenary addresses, workshops and the presentation of papers. Concordia will likely host the institute again next year, as TESL Canada prefers host universities to stage the event for two years running.

Dr. B. Barkman, Ms. M. Kovacs of the TESL Centre

Barbara Burnaby, current president of TESL Canada, said in a recent telephone interview from Toronto that Concordia was chosen "because its programs are well-respected. They cover all areas from the theoretical to the practical, and have a good research component." Other factors that worked in Concordia's favor are its wide range of undergraduate courses and language training programs.

A broad selection of graduate courses will bolster the range of courses available. "Normally, we offer more than four summer courses," says Dr. Bruce Barkman, Program Director for the master's program in Applied Lingusitics. "This summer we are able to offer 12."

As in many areas of scientific inquiry, research in this discipline involves the application of the newest technologies to long-established academic disciplines. Artificial intelligence, for example, will play a large part in the future of language teaching, Barkman explains. This is so because computers have the potential to provide students with the immediate feedback on their language proficiency and to provide series of exercises directed to correct their errors. At least one Concordia professor who teaches in the master's program is now actively involved in research related to computer-assisted language learning.

Since the program began in 1976, master's students have produced 50 theses, while another 20 students have graduated from the non-thesis option. Enrolment stands at 57, half of these are full-time students and half part-time. Ten to 15 students are accepted into the program every year and between five and twelve graduate annually.

"The MA in Applied Linguistics is a continuation of our undergraduate programs," Barkman says. At the master's level this focus is maintained – on a more advanced level – and its aim is to provide training in language education that will enable students to assume positions as administrators of linguistics programs, as syllabus designers, curriculum developers and materials writers.

Students from the program seem to have been remarkably successful in their career pursuits, several hold posts at Canadian universities, others work as directors of ESL programs and many work overseas as English teachers.

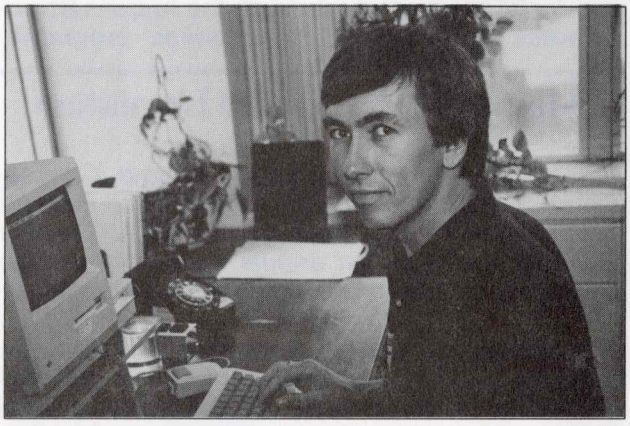
Applicants require a Bachelor's degree in a related field, such as a foreign language, English literature, or a degree in TESL or linguistics. There are prerequisite courses for those lacking entrance requirements. Normally, two years are required to complete the 45-credit program. Courses are offered in the late afternoon and early evening to accommodate both full- and part-time students.

The local, national and international student population now have the choice of two options available in the program. Both involve course work and a comprehensive exam while one requires a thesis and the other stresses course work.

Concordia offers two positions as teaching assistants for students in the program. Those seeking further information can call the Centre for Teaching English as a Second Language at **(514) 848-2450**, or write to the centre at 1455 de Maisonneuve Blvd. West, MI – 304, Montréal, Québec H3G 1M8.

Graduate Student Profile: Dale Corbett, Ph.D.

Having worked with Dr. Roy Wise in Concordia's Department of Psychology, Dale Corbett was a psychology doctoral graduate of 1978. He then went on to do two years of NSERC post-doctoral work at McGill before taking a post, for five years, as Assistant Professor at Harvard University. Continuing his research in the area of brain mechanisms of reward and punishment, Dr. Corbett is now Professor of Neuroscience and Psychology. Both Dr. Corbett and his wife, proud parents, happily returned to Canada in 1985 to work in the Faculty of Medicine and do active research at Memorial University in St. John's, Nfld.



Dr. Dale Corbett

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